

REMARKS

The Applicant has received and reviewed the Office Action dated March 14, 2006 wherein the Office rejected claims 1, 2, 5, 7-12, and 30-32 under U.S.C. 102(b) as being anticipated by the reference Bayley et al (Great Britain Patent No. 1,443,704); rejected claims 3, 4, 6, 13-17, 20-29 and 33 under U.S.C. 103(a) as being unpatentable over the combination of the references of Bayley et al, Marsden et al. (U.S. Patent No. 2,469,883), Baranowski (U.S. Patent No. 3,561,193), and Kobayashi et al. (U.S. Patent No. 5,206,330); rejected claims 18 and 19 under U.S.C. 103(a) as being unpatentable the combination of the references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al. (U.S. Patent No. 6,413,429); and rejected claim 34 under U.S.C. 103(a) as being unpatentable over the combination of the references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al.

Rejection under 35 U.S.C. 102(b) to Bayley et al.

Applicant's claims 1, 2, 5, 7-12, and 30-32 stand rejected under 35 U.S.C. 102(b) as being anticipated by the reference of Bayley et al (Great Britain Patent No. 1,443,704). The Applicant respectfully disagrees with the Office's aforementioned rejection.

Referring to page 4, lines 8-14 and page 8, lines 12-19 of the Applicant's specification, it is respectfully noted that the Applicant's invention is directed to a process for the removal of an unwanted liquid from a fluid through the creation of a dispersion of a plurality of droplets of an extraction liquid in a fluid supply with:

“...the droplets not separable by conventional liquid/liquid separation technologies – such as filter-coalescers, residence time coalescers with mesh-pads or vane-packs, centrifuges etc.” (See page 4, lines 8-14 of the Applicant’s specification.)

A feature of the present invention is that once dispersed in the fluid supply, the plurality of extraction liquid droplets of the present invention form a polar interaction with unwanted liquids in the fluid to form a plurality of coalesceable microdispersed droplets containing the unwanted liquid. More specifically, Applicant’s independent claims 1 and 30 each calls for the step of:

“... allowing the plurality of extraction liquid droplets to form a polar interaction with the unwanted liquid in the fluid to cause the extraction liquid droplets to form into a plurality of microdispersed droplets containing the unwanted liquid; ...” (Emphasis added.)

The Applicant respectfully submits that the reference of Bayley et al. does not teach the formation of a polar interaction between droplets of Bayley et al.’s solvent and the liquid to be recovered in the liquid/liquid mixture. The reference of Bayley et al. instead requires Bayley et al.’s solvent and the liquid to be recovered in the liquid/liquid mixture to come into intimately contact and form a two-phase dispersion with the remaining liquid of the liquid/liquid mixture. (See for example page 1, lines 10-24 and page 3, lines 47-70 of Bayley et al.) Note in page 4, lines 41-46 wherein Bayley et al. teaches that if contact between Bayley et al.’s solvent and the liquid to be recovered in the liquid/liquid mixture is not completed in the mixing chamber, the contact between Bayley et al.’s solvent and the liquid to be recovered in the liquid/liquid mixture “... can also continue in the packing itself.” It is respectfully noted that the stream from which Bayley et al.’s liquid is to be recovered is itself a liquid/liquid dispersion, whereas in the present invention, there is no dispersion prior to the

introduction of the extracting fluid. The Applicant respectfully submit that a polar interaction between the Applicant's extraction liquid droplets and the unwanted liquid of Applicant's independent claims 1 and 30 is different from an intimate contact between Bayley et al.'s solvent and the liquid to be recovered in Bayley et al.'s liquid/liquid mixture.

In view of the above, since the reference of Bayley et al. does not teach the formation of a polar interaction between droplets of Bayley et al.'s solvent and the liquid to be recovered in the liquid/liquid mixture but instead requires the intimate contact between the solvent and the liquid to be recovered in the liquid/liquid mixture in order to form a two-phase dispersion with the remaining liquid of the liquid/liquid mixture for separation, the Applicant respectfully submits that Applicant's independent claims 1 and 30 are allowable over the reference of Bayley et al.

In further regards to the above, in *Atlas Powder Co. v. IRECO Inc.*, the Federal Circuit held:

“To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently.” Emphasis added, see *Atlas Powder Co. v. IRECO Inc.*, 51 USPQ2d 1943, 1945 (Fed. Cir. 1999), citing *In re Schreiber*, 44 USPQ 1429, 1477 (Fed. Cir. 1997)

Since the reference of Bayley et al. does not teach the formation of a polar interaction between the plurality of extraction liquid droplets and the unwanted liquid in the fluid as called for in Applicant's independent claims 1 and 30, the Applicant submits, in view of *Atlas Powder Co. v. IRECO Inc.*, that Applicant's independent claims 1 and 30 are allowable over the reference of Bayley et al.

It is for the above reasons that the Applicant respectfully submits that Applicant's independent claims 1 and 30 are allowable over the reference of Bayley et al.

Rejection under 35 U.S.C. 103(a) to combination of the references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al.

Applicant's claims 3, 4, 6, 13-17, 20-29 and 33 stand rejected under U.S.C. 103(a) as being unpatentable over the combination of the references of Bayley et al, Marsden et al. (U.S. Patent No. 2,469,883), Baranowski (U.S. Patent No. 3,561,193), and Kobayashi et al. (U.S. Patent No. 5,206,330). Applicant's claims 18, 19, and 34 stand rejected under U.S.C. 103(a) as being unpatentable the combination of the references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al. (U.S. Patent No. 6,413,429).

The Applicant respectfully submits that the combination of the references of Bayley et al, Marsden et al., Baranowski and Kobayashi et al., and the combination of the references of Bayley et al, Marsden et al., Baranowski, Kobayashi et al. and Breman et al. does not make Applicant's claims 3, 4, 6, 13-29 and 33-34 obvious. More specifically, Applicant's independent claim 13 calls for a process for the extraction of an acid from a fluid that includes the step of:

“...forming a stable physical emulsion comprising a plurality of polar liquid droplets dispersed through out the fluid, said polar liquid droplets attractable to the acid in the fluid through a polar interaction to form a plurality of polar liquid acid droplets;...”
(Emphasis added.)

The Applicant respectfully submits that the combination of the references of Bayley et al, Marsden et al., Baranowski and Kobayashi et al. does not make applicant's independent claim 13 obvious as a review of the references of Bayley et al, Marsden et al., Baranowski and Kobayashi et al. reveals that the references of Bayley et al, Marsden et al., Baranowski and Kobayashi et al. each do not teach a polar interaction to form a plurality of polar liquid acid droplets as called for in Applicant's independent claim 13. Specifically, Bayley et al. teaches the use of a solvent to separate an extant liquid/liquid mixture, whereas the present invention teaches the extraction of the acid from a solution. The reference of Marsden et al. teaches the separation of the acid from a silicone by dissolving the silicone into a nonpolar solvent such as toluene. The reference of Kobayashi et al. teaches the reactive hydrolysis of the acid catalyst followed by separation, which is not an extractive process.

Applicant's independent claim 28 calls for a process for the extraction of an acid from a fluid including of the step of:

“... forming a stable emulsion comprising a plurality of water droplets under 10 micron in diameter dispersed throughout the silicone fluid stream, said plurality of water droplets attractable to the acid in the silicone fluid through a hydrophilic interaction to form a plurality of water-acid droplets in the silicone fluid stream; ...”
(Emphasis added.)

Applicant's independent claim 33 calls for a process for the extraction of an acid from a fluid including of the step of:

“... forming a stable emulsion comprising a plurality of water droplets under 10 micron in diameter dispersed throughout the silicone fluid stream, said plurality of water droplets attractable to the acid in the silicone fluid through a hydrophilic interaction to form a plurality of water-acid droplets in the silicone fluid stream; ...”
(Emphasis added.)

Applicant's independent claim 34 calls for a process for the extraction of an acid from a fluid including of the step of:

“...forming a stable emulsion comprising a plurality of water droplets under 10 micron in diameter dispersed throughout the silicone fluid stream, said plurality of water droplets attractable to the acid in the silicone fluid through a hydrophilic interaction to form a plurality of water-acid droplets in the silicone fluid stream;...”
(Emphasis added.)

The Applicant respectfully submits that the combination of the references of Bayley et al, Marsden et al., Baranowski and Kobayashi et al., and the combination of the references of Bayley et al, Marsden et al., Baranowski, Kobayashi et al. and Breman et al. do not make Applicant's independent claims 28, 33, and 34 obvious as a review of the references of Bayley et al, Marsden et al., Baranowski, Kobayashi et al. and Breman et al. et al. reveals that the references of Bayley et al, Marsden et al., Baranowski, Kobayashi et al. and Breman et al. each do not teach “... a hydrophilic interaction to form a plurality of water-acid droplets in the silicone fluid stream;...” as called for in Applicant's independent claims 28, 33, and 34.

In further regards to the Office's rejection of Applicant's claims 3, 4, 6, 13-29 and 33-34, in *ACS Hospital Systems, Inc. v. Montefiore Hospital*, the CAFA held:

“Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so.”¹ (Emphasis added.)

¹ See *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 221 USPQ 929, 933 (CAFA 1984).

In view of *ACS Hospital Systems, Inc. v. Montefiore Hospital*, the Applicant respectfully submits that it would not have been obvious to combine the references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al. to produce the invention of Applicant's claims 3, 4, 6, 13-29 and 33-34 as the references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al. fail to provide any such suggestion or incentive to combine them in the manner cited by the Office in support of the Office's rejection of Applicant's claims 3, 4, 6, 13-29 and 33-34.

The Applicant also respectfully disagrees with the Office's combination of the references of Bayley et al, Marsden et al., Baranowski and Kobayashi et al., and of the references of Bayley et al, Marsden et al., Baranowski, Kobayashi et al. and Breman et al. in support of the Office's rejection of Applicant's claims 3, 4, 6, 13-29 and 33-34 as the aforementioned references teach away from their combination. For example, note that the reference of Baranowski teaches:

“...a process for the purification of oils such as transformer oils, lubricating oils, and hydraulic oil which are contaminated with water, air, gases, and solid particles.”
(Column 1, lines 27-30.)

That is, the reference of Baranowski is directed to the removal contaminants from Baranowski's fluid (oil) supply. Note for example in column 3, lines 30-35 wherein Baranowski calls for the use of a filter-separator 11 “... to coalesce and remove substantially all of the free water contained in the oil.” (Emphasis added.)

The reference of Kobayashi teaches the opposite of the reference of Baranowski by calling for a method for the preparation of an organopolysiloxane such as silicone fluid that includes the addition of a supply of water to Kobayashi's fluid (mixture of organosiloxane oligomers) supply to hydrolyze an acid residue bonded to the organopolysiloxane molecules. (Column 3, lines 13-16 of Kobayashi.)

Since the references Baranowski and Kobayashi against their combination, the Applicant respectfully submits that it would not have been obvious to combine the references Baranowski and Kobayashi et al. to the references of Bayley et al, Marsden et al., and to the references of Bayley et al, Marsden et al., and Breman et al. to reject Applicant's claims 3, 4, 6, 13-29 and 33-34.

In further regards to the Office's combination of the references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al., it is respectfully submitted that each of the processes of references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al. work properly for it intended purposes. In view of the aforementioned, the Applicant respectfully submits that there is no motivation for a person of ordinary skill in the field of the invention, namely solvent recovery of liquid/liquid mixtures, to combine the references of Bayley et al, Marsden et al. Baranowski and Kobayashi et al., and to combine the references of Bayley et al, Marsden et al, Baranowski, Kobayashi et al., and Breman in the manner cited by the Office in support of the Office's rejection of Applicant's claims 3, 4, 6, 13-29 and 33-34 and that such combination was a product hindsight reconstruction.

In the case of *In re Fritch*, the C.A.F.C. held that:

“It is impermissible to use the claimed invention as an instruction manual or “template” to piece together the teachings of the prior art so that the claimed invention is rendered obvious.”²

In the case of *In re Fine*, the C.A.F.C. further held that:

“One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.”³

In view of *In re Fritch* and *In re Fine*, the Applicant respectfully submits that the combination of the references of Bayley et al, Marsden et al, Baranowski, Kobayashi et al., and Breman in the manner cited by the Office in support of the Office’s rejection of Applicant’s claims 3, 4, 6, 13-29 and 33-34 is improper as it was due to the benefit of impermissible hindsight.

It is for the above reasons that the Applicant respectfully submits that it would not have been obvious for one of ordinary skill in the art to combine the references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al. in the manner cited by the Office in support of the Office’s rejection of Applicant’s claims 3, 4, 6, 13-19, 20-29 and 33-34.

In further regards to Applicant’s claims 2-12, 14-27, 29, and 31-32, Applicant’s dependent claims 2-12 depend on Applicant’s independent claim 1 and Applicant’s dependent claim 14-27 depend on Applicant’s independent claim 13. Since Applicant’s independent claim 1 and

² See *In re Fritch*, 23 USPQ2d 1783, 1784 (C.A.F.C. 1992), also see *In re Gordon*, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

³ See *In re Fine*, 5 USPQ2d 1596, 1600 (C.A.F.C. 1988).

Applicant's independent claim 13 are allowable for the reasons given above, Applicant's dependent claims 2-12 and 14-27 should also be allowable. Applicant's dependent claim 29 depends on Applicant's independent claim 28 and Applicant's dependent claims 31-32 depend on Applicant's independent claim 30. Since Applicant's independent claims 28 and 30 are allowable for the reasons given above, Applicant's dependent claims 29 and 31-32 should also be allowable.

In view of the above, it is submitted that the application is in condition for allowance.

Allowance of claims 1-34 is respectfully requested. Applicant has enclosed a version of the amendment showing changes made with this response.

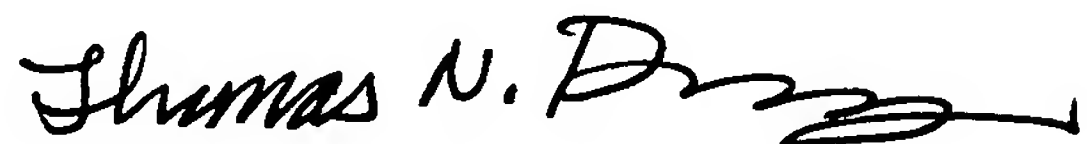
Please note that a response to an Office Action for the present case was due on June 14, 2006.

The Applicant hereby request a one-month time extension up to and including the date of July 14 2006. Enclosed is a credit card authorization in the amount of \$60.00 for payment of the two-month time extension. Applicant is a small entity. Please charge any additional fees to Deposit Account 10-0210.

Respectfully submitted,

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By



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Enclosure